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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,038	02/05/2004	Detlef Haje	2002P10620US	6104

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SIEMENS CORPORATION
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EXAMINER	
HANAN, DEVIN J	
ART UNIT	**PAPER NUMBER**
3745	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/773,038	HAJE ET AL.	
	Examiner	Art Unit	
	Devin Hanan	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 23-25 is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 2/5/2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/5/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because it is more than one paragraph and exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The "groove at a blade root" is represented by the numeral 40 (specification page 22 lines 7-8). The claim has the groove being part of the passage (44), but figure 3 does not show groove (40) to be in communication or adjacent to the passage (44).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 12, 13, as far as it is definite, 14, 15 and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuhn et al. (U.S. Patent 6,227,799)

Kuhn et al. discloses a steam turbine rotor (23, 25) extending along an axial extent (axis 2) with an outer side (3) adjoining an outer space (space between 19 and 11) arranged to receive a main flow of a fluid working medium;

a first location arranged along the outer side (col. 2 lines 40-59), at which a first blade is held; and

at least one integrated passage (5) extending continuously at least between a first region arranged in front of the first location and a second region arranged behind the first location (col. 2 lines 40-59).

Regarding claim 2, Kuhn et al. discloses a second location arranged along the outer side at which a second blade is held, the second location arranged behind the first location along the axial extent and the passage extending continuously at least between a first region arranged in front of the first location and a second region arranged behind the second location (col. 2 lines 40-59).

Regarding claim 3, Kuhn et al. discloses a number of further locations at each of which a blade is held arranged between the first location and the second location (from turbine 23 to turbine 25).

Regarding claim 4, Kuhn et al. discloses at least one passage (5) is part of a combined passage system, which extends along the axial extent.

Regarding claim 5, Kuhn et al. discloses at least one passage (5) is part of a combined passage system, which has an external feed (8) that is provided for the incoming flow of cooling medium.

Regarding claim 6, Kuhn et al. discloses at least one passage (5) is part of a combined passage system, which includes a channel that at least partially encircles a circumferential extent (3) of the rotor.

Regarding claim 7, Kuhn et al. discloses the first region has a first opening to the main flow (8).

Regarding claim 8, Kuhn et al. discloses the second region has a second opening to the main flow (12).

Regarding claim 12, Kuhn et al. discloses the passage leads through a blade in particular through a blade root (38).

Regarding claim 13, Kuhn et al. discloses a groove (20) at a blade root that is part of the passage.

Regarding claim 14, Kuhn et al. discloses a bore through a single blade root that is part of the passage.

Regarding claim 15, Kuhn et al. discloses a channel in a main blade part that is connected to the passage.

Regarding claim 17, Kuhn et al. discloses a steam turbine having a steam turbine rotor (23, 25) extending along an axial direction (axis 2) with

an outer side (3) adjoining an outer space (space between 19 and 11) arranged to receive a main flow of a fluid working medium;

a first location arranged along the outer side (col. 2 lines 40-59), at which a first blade is held; and

at least one integrated passage (5) extending continuously at least between a first region arranged in front of the first location and a second region arranged behind the first location (col. 2 lines 40-59).

Regarding claim 18, Kuhn et al. discloses a method for cooling a steam turbine rotor extending along an axial extent and having an outer side which adjoins an outer space which is intended to receive a main flow of a fluid working medium and having a first location along the outer side at which a first blade is held (col. 2 lines 40-59, and figure 1),

providing a fluid cooling medium (6);

guiding the fluid cooling medium continuously within the steam turbine rotor along the axial extent (5) at least between a first region arranged in front of the first location and a second region arranged behind the first location.

Regarding claim 19, Kuhn et al. discloses a method for where a steam turbine rotor has a second location along the outer side at which a second blade is held, the second location arranged behind the first location along the axial extent and the fluid cooling medium guided continuously at least between a first region arranged in front of the first location and a second region arranged behind the second location (col. 2 lines 40-59).

Regarding claim 20, Kuhn et al. discloses guiding the cooling medium in a combined passage system along the axial extent over the first location and the second location and a number of intervening locations at each of which a blade is held (col. 2-3 lines 55-6).

Regarding claim 21, Kuhn et al. discloses feeding the cooling medium to the steam turbine rotor from the outside (8).

Regarding claim 22, Kuhn et al. discloses guiding the cooling medium at a pressure which exceeds a pressure of the main flow (col. 4 lines 6-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. in view of Plemmons et al. (U.S. Patent 5,232,339).

Kuhn et al. discloses the above mentioned elements of a fluid turbine blades, but does not disclose a shielding plate which can rotate with the rotor, is held by the blade and formed by the blade root.

However, Plemmons et al. teaches of a fluid turbine blade with a shielding plate (element 92 is placed in a similar location, separating the main flow from the cooling flow, see figure 4) which rotates with the rotor (element 92 is part of the blade which is attached to the rotor), is held by the blade and formed by the blade root (element 45 is part of the blade which is attached to the rotor by the blade root portion 46) for the purpose of directing cool air (col. 4 lines 22-30).

Since Kuhn et al. and Plemmons et al. are from the same field of endeavor, fluid turbines; Plemmons et al. would have been recognized in the pertinent art of Kuhn et al. It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the shield of Plemmons et al. to the blade of Kuhn et al. for the purpose of directing cooling air (col. 4 lines 22-30).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. in view of Norton et al. (U.S. Patent 5,380,154).

Regarding claim 16, Kuhn et al. does not disclose using a thermally insulating coating on the blade.

However, Norton et al. teaches of ceramic coatings on high temperature turbine guide vanes and blades for the purpose of enhancing heat resistance (col. 1 lines 47-49).

Since Kuhn et al. and Norton et al. are from the same field of endeavor, fluid turbines, Norton et al. would have been recognized in the pertinent art of Kuhn et al. It would have been obvious at the time the invention was made to one of ordinary skill in the art to add the ceramic coating of Norton et al. to the blade of Kuhn et al. for the purpose of enhancing heat resistance (col. 1 lines 47-49).

Allowable Subject Matter

Claims 23-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

The patent to Oeyenhausen et al. (U.S. Patent 6,102,654) was cited for its teaching of similar blade, vane and rotor structure without cooling passages in the blades.

The patent to Drosdziok et al. (U.S. Patent 6,082,962) was cited to show cooling passages inside of the rotor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devin Hanan whose telephone number is 571-272-6089. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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6/13/05